

Amendments to the Specification:

Please amend the Specification in the numbered paragraphs shown:Claims

[0023] The drawworks 11 is operated during active drilling so as to apply a selected axial force (weight on bit--"WOB") to the drill bit 40. Such axial force, as is known in the art, results from the weight of the drill string, a large portion of which is suspended by the drawworks 11. The unsuspended portion of the weight of the drill string is transferred to the bit 40 as WOB. The bit 40 is rotated by turning the pipe 32 using a rotary table/kelly bushing (not shown in FIG. 1) or preferably a top drive 14 (or power swivel) of any type well known in the art. While the pipe 32 (and consequently the BHA 42 and bit 40) as well is turned, a pump 20 lifts drilling fluid ("mud") 18 from a pit or tank 24 and moves it through a standpipe/hose assembly 16 to the top drive 14 (or[[e]] kelly/rotary table) so that the mud 18 is forced through the interior of the pipe segments 32 and then the BHA 42. Ultimately, the mud 18 is discharged through nozzles or water courses (not shown) in the bit 40, where it lifts drill cuttings (not shown) to the earth's surface through an annular space between the wall of the wellbore 22 and the exterior of the pipe 32 and the BHA 42. The mud 18 then flows up through a surface casing 23 to a wellhead and/or return line 26. After removing drill cuttings using screening devices (not shown in FIG. 1), the mud 18 is returned to the tank 24. Other embodiments of a drill string may include an hydraulic motor (not shown) therein to turn the drill bit 40 in addition to or in substitution of the rotation provided by the top drive 14 (or kelly/rotary table).

[0030] In the present embodiment, the automatic control system includes an electric servo motor 150 coupled to the brake handle 154 by a cable 152. The cable ~~154~~ 152 may include a quick release 152A or the like of types well known in the art as a safety feature. A rotary encoder 166 is rotationally coupled to the drum 162. The encoder 166 generates a signal related to the rotational position of the drum 162. Both the servo motor 150 and the encoder 166 are operatively coupled to a controller 168, which may reside in the recording unit (12 in FIG. 1) or elsewhere on the drilling rig. The controller 168 may be a purpose built digital processor, or may be part of a general purpose, programmable computer.